

## U.S. GEOLOGICAL SURVEY-BRANCH OF ATLANTIC MARINE GEOLOGY

## ELECTRONIC CRUISE REPORT

1. SHIP NAME (Parent vessel)/SUBMERSIBLE/OWNER-OPERATOR:  
JOIDES Resolution (SEDCO/BP 471) JDRS 95040
2. PRE-CRUISE SERIAL # AND/OR CRUISE-LEG: 95040
3. PROJECT # AND NAME: 34120 & 34121 Gas Hydrates
4. FUNDING AGENCY: Joint Oceanographic Institutions, Inc. (JOI)
5. CONTRACT (If applicable):
6. AREA OF OPERATIONS: Cape Fear Slide and Blake Ridge,  
off coast of N. Carolina
7. START DATE: 31 Oct 95
8. START PORT: Halifax, Nova Scotia
9. END DATE: 19 Dec 95
10. END PORT: Miami, FL
11. CHIEF SCIENTIST(S): Ryo Matsumoto, University of Tokyo  
Charles Paull, University of North Carolina
12. SCIENTIFIC PARTY (Names,affiliations,cruise duties):  
28 scientific participants from 9 countries  
Available from leg 164 preliminary results volume (Crawford  
Reading Room)
13. SHIP'S CAPTAIN (and affiliation): Tom Ribbens
14. PURPOSE OF CRUISE (brief statement)  
Learn as much as possible about occurrence and properties of  
in situ gas hydrates:
  1. quantify the amount of in situ gas hydrates (GH)
  2. learn about lateral extent of GH
  3. assess interaction between bottom simulating reflector  
(BSR) and amount and location of GH
  4. investigate in situ sediment fabric near GH
  5. assess changes in physical properties of sediment  
associated with the formation and decomposition of GH
  6. determine origin of gas trapped in GH

7. GH influence on authigenic carbonates
8. measure chemical and isotopic composition of gas from GH
9. determine gas composition, hydration number and crystal

structure of GH

10. influence of GH and fluid migration
11. assess GH dissociation on slope instability
12. relationship between Carolina Rise diapirs and GH and

origin of diapirs

15. NAVIGATION TECHNIQUES:

Satellite (GPS)  
Ocean bottom transponder

16. SCIENTIFIC EQUIPMENT:

Drilling-related and down-hole:

Advanced Piston Corer (APC)  
Extended Core Barrel (XCB)  
Rotary Core Barrel (RCB)  
Pressure Core Sampler (PCS)  
Water-sampling Temperature Probe (WSTP)  
Fisseler water sampler

Fully equipped labs:

Geotechnical Laboratory

Balance  
Gas comparison pycnometer  
Vane shear strength machine  
P-wave velocity (3 axis)  
Multisensor track

Gamma Ray Attenuation Porosity Evaluato

r

(GRAPE)

P-wave velocity logger  
Magnetic susceptibility meter  
Natural gamma radiation detector

Thermal conductivity

Lithostratigraphy

Smear slides  
Thin sections  
X-ray diffraction  
Spectrophotometer  
X-raydiography

Gas hydrate sampling

Core temperature measurement  
Gas hydrate dissociation chamber  
Isothermal decompression analysis system  
Gas collection chambers

Paleomagnetic detector

Organic Geochemistry

Natural gas analyzer

Gas chromatograph  
Carbon dioxide coulometer  
NCS analyzer  
Inorganic geochemistry  
Ion chromatograph  
Atomic absorption spectrometer  
Geophysics  
Three-component borehole seismometer  
Airgun  
Water gun  
Downhole logging  
Natural gamma-ray spectrometry tool  
Phasor dual induction-spherically focused  
resistivity tool  
Long spaced sonic tool  
High temperature lithodensity tool  
Compensated neutron porosity tool  
Geochemical logging tool  
Formation microscanner tool  
In situ temperature  
ADARA APC tool  
Water sampling - temperature probe (WSTP)  
Davis-Villinger temperature probe

17. TABULATED INFORMATION:

DAYS AT SEA: 50  
CONTINUOUS DATA (in km):  
STATIONS OCCUPIED (stationary and underway): 7 sites; 17  
holes  
SUBMERSIBLE DIVES (BY #): 0  
STATION INFORMATION:  
Available from leg 164 preliminary results volume  
Station number:  
Date of occupation:  
Latitude/Longitude:  
Water depth:  
Sampling device (dive #):  
Number and type of samples:

18. SUBMITTED BY AND DATE:

Bill Winters 16 Oct96

19. SEISMIC LINE LIST IN CHRONOLOGICAL ORDER: (#, date, Julien day,  
start/end time in UTC, where data reside if not in Woods Hole)

20. SAMPLE/CORE LIST: (#, lat/long, type, where data reside)  
Available from leg 164 preliminary results volume